WHAT IS CLAIMED IS:

1.   An image processing device comprising:
an image receiving unit to receive an original image data;
an edge detection unit to detect an edge data included in an image data related to said received original image data;
5   a rotation unit to rotate said detected edge data;
an operation unit to derive a characteristic amount of said rotated edge data; and
an inclination detection unit to detect an inclination angle of said received original image data based on said derived characteristic amount.

2.   The image processing device according to claim 1 further comprising:
a reduction unit to reduce said received original image data; wherein said edge detection unit detects an edge data included in said
5   reduced image data.

3.   The image processing device according to claim 1 further comprising:
an inclination correction unit to correct the inclination of said received original image data based on said detected inclination angle.

4.   The image processing device according to claim 1 wherein said edge detection unit detects said edge data by differentiating said reduced image data with a filter.

5.   The image processing device according to claim 4 wherein said edge detection unit uses different filters for finding an edge data in a horizontal direction and for finding an edge data in a vertical direction.

6.   The image processing device according to claim 1 wherein said operation unit forms a histogram by projecting said detected

edge data in a predetermine direction, and

said characteristic amount is a distribution of said formed histogram.

7. The image processing device according to claim 6 wherein

said predetermined direction includes a vertical direction and a horizontal direction of said original image data.

8. The image processing device according to claim 2 further comprising: a camera to pick up an image of an original; wherein

the image data received by said image receiving unit is an image picked up by said camera.

9. An image processing device comprising:

an image receiving unit to receive an original image data;

a process image forming unit to form an image data to be processed based on said received original image data;

5   a geometric transformation unit to perform a swing rotation transformation on said formed image data using an angle as a parameter;

a first inclination detection unit to detect a first inclination of a first area in said formed image data;

a second inclination detection unit to detect a second inclination of a second area opposing said first area in said formed image data; and

10   a swing correction unit to perform a swing rotation transformation on said received original image data based on said first inclination and said second inclination.

10. The image processing device according to claim 9 further comprising:

a comparison unit to compare said first inclination and said second inclination; wherein

5   said swing correction unit performs said swing rotation formation based on the comparison by said comparison unit.

11. The image processing device according to claim 9 further comprising:

a third inclination detection unit to detect an inclination of a left side area in said formed image data;

5　　　a fourth inclination detection unit to detect an inclination of a right side area in said formed image data; wherein

said first area is an upper side area in said formed image data,

said second area is a lower side area in said formed image data,

said processing image forming unit forms a rectangular formed by

10　　straight lines with detected inclinations of said upper side area, said lower side area, said left side area and said right side area, respectively,

said geometric transformation unit transforms coordinates of apexes of said formed rectangular image.

12. An image processing device comprising:

an image receiving unit to receive an original image data obtained with a camera picking up an original image;

a swing correction unit to correct distortion of an image caused by a

5　　swing of said camera with respect to the original image; and

a skew correction unit to correct distortion of an image caused by a skew of said camera with respect to the original image.

13. The image processing device according to claim 12 wherein

said skew correction unit corrects the distortion of the image corrected by said swing correction unit.

14. The image processing device according to claim 12 further comprising:

an inclination detection unit to detect an inclination of each of a plurality of portions in said received original image data wherein

5　　said swing correction unit and said skew correction unit correct distortion of said received original image data based on said detected inclinations.

15.　The image processing device according to claim 12 further comprising:

an image reduction unit to reduce said received original image data; and

5　an inclination detection unit to detect an inclination of each of a plurality of portions of said reduced image data; wherein

said swing correction unit and said skew correction unit correct a distortion of said received original image data based on said detected inclinations.

16.　The image processing device according to claim 12 further comprising:

a process image forming unit to form an image to be processed based on said received original image data;

5　a first swing angle detection unit to detect a swing angle in a first direction of said received original image data by performing a geometric transformation on said image to be processed;

a skew angle detection unit to detect a skew angle of said received original image data by performing the geometric transformation on the

10　image subjected to the geometric transformation by said first swing angle detection unit; and

a second swing angle detection unit to detect a swing angle in a second direction of said received original image data by performing the geometric transformation on the image subjected to the geometric

15　transformation by said skew angle detection unit; wherein

said swing correction unit corrects said received original image data based on the detected swing angle in said first direction and the detected swing angle in said second direction;

said skew correction unit corrects said received original image data

20　based on said detected skew angle.

17.　An image processing method comprising the steps of:
receiving an original image data;

detecting an edge data included in an image data to be processed related to said received original image data;

5   rotating said detected edge data;

deriving a characteristic amount of said rotated edge data; and

correcting an inclination of said received original image data based on said derived characteristic amount.

18.   The image processing method according to claim 17, said image data to be processed is said received original image data.

19.   The image processing method according to claim 17, further

5   comprising the step of;

reducing said received original image data; wherein said image data to be processed is said reduced original image data.